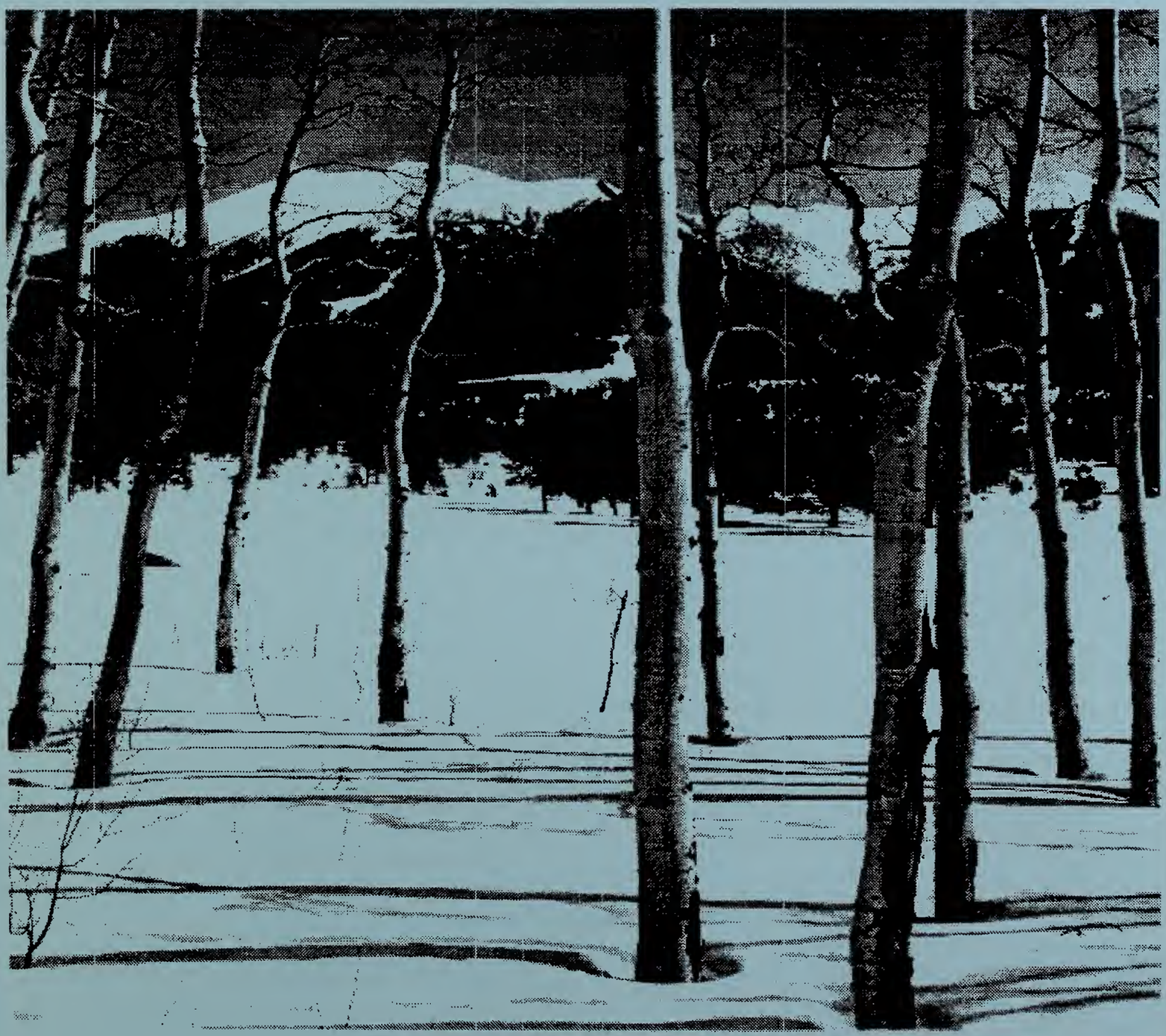
USDA United States Department of Agriculture

Natural Resources Conservation Service

Idaho Basin Outlook Report January 1, 2000



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http://idsnow.id.nrcs.usda.gov/

How forecasts are made

Most of the annual streamflow in the western United States originates as snowfall that has accumulated in the mountains during the winter and early spring. As the snowpack accumulates, hydrologists estimate the runoff that will occur when it melts. Measurements of snow water equivalent at selected manual snow courses and automated SNOTEL sites, along with precipitation, antecedent streamflow, and indices of the El Niño / Southern Oscillation are used in computerized statistical and simulation models to prepare runoff forecasts. These forecasts are coordinated between hydrologists in the Natural Resources Conservation Service and the National Weather Service. Unless otherwise specified, all forecasts are for flows that would occur naturally without any upstream influences.

Forecasts of any kind, of course, are not perfect. Streamflow forecast uncertainty arises from three primary sources: (1) uncertain knowledge of future weather conditions, (2) uncertainty in the forecasting procedure, and (3) errors in the data. The forecast, therefore, must be interpreted not as a single value but rather as a range of values with specific probabilities of occurrence. The middle of the range is expressed by the 50% exceedance probability forecast, for which there is a 50% chance that the actual flow will be above, and a 50% chance that the actual flow will be below, this value. To describe the expected range around this 50% value, four other forecasts are provided, two smaller values (90% and 70% exceedance probability) and two larger values (30%, and 10% exceedance probability). For example, there is a 90% chance that the actual flow will be more than the 90% exceedance probability forecast. The others can be interpreted similarly.

The wider the spread among these values, the more uncertain the forecast. As the season progresses, forecasts become more accurate, primarily because a greater portion of the future weather conditions become known; this is reflected by a narrowing of the range around the 50% exceedance probability forecast. Users should take this uncertainty into consideration when making operational decisions by selecting forecasts corresponding to the level of risk they are willing to assume about the amount of water to be expected. If users anticipate receiving a lesser supply of water, or if they wish to increase their chances of having an adequate supply of water for their operations, they may want to base their decisions on the 90% or 70% exceedance probability forecasts, or something in between. On the other hand, if users are concerned about receiving too much water (for example, threat of flooding), they may want to base their decisions on the 30% or 10% exceedance probability forecasts, or something in between. Regardless of the forecast value users choose for operations, they should be prepared to deal with either more or less water. (Users should remember that even if the 90% exceedance probability forecast is used, there is still a 10% chance of receiving less than this amount.) By using the exceedance probability information, users can easily determine the chances of receiving more or less water.

IDAHO WATER SUPPLY OUTLOOK REPORT

January 1, 2000

SUMMARY

As a result of the dry spell that started last summer and extended through the fall and early winter, snowpacks are 50-80% of average across the southern 2/3 of Idaho. As of January 1, only the Panhandle and Clearwater basins had a normal snowpack. **This has many of our water users and the public asking when to raise the "Red Drought Flag." Snowpacks conditions are changing rapidly since the beginning of January and as we compile the information for this month's water supply report. Here's a summary of the current situation:**

- As a result of last year's abundant snowmelt runoff, **reservoir storage is above to well above average** across the State. Most reservoirs are 50-80% of capacity.

- Typically on January 1, we are about 40% of the way through the snow season and **have over half the winter still to come**.

- Idaho's Surface Water Supply Index (SWSI), which is based on projected April 1 reservoir storage and projected streamflows, indicates that **surface water supplies may start reaching the agricultural shortage threshold if runoff levels are much less than the currently projected Most Probable flows.** Southern Idaho irrigators without reservoir storage water may experience the typical shortages associated with below normal summer streamflows.

- This winter is still expected to be a **La Nina type year** based on earlier predictions and as indicated by the Southern Oscillation Index (SOI). Sea surface temperatures in December in the south Pacific indicate moderate to strong La Nina conditions exist which are stronger than three months ago and similar to last year. Previous La Nina years resulted in average to well above average conditions throughout Idaho and produced above normal streamflow in most years. However, exceptions do occur, such as the 1989 La Nina year in which the average snowpack resulted in below normal streamflow. That was a result of well below normal spring precipitation and because 1989 followed several drought years. Currently, **we are in a "wet cycle."** Many springs and moisture in the soil profile have been recharged as a result of the past five years of average or better snowpacks in Idaho.

- In Idaho, **one year of below normal snowpacks does not cause major problems.** It is the multiple years of below normal snowpacks like those that hit the State in the late 1980s and early 1990s that have major devastating effects.

To summarize, if snowpacks remain below normal across southern Idaho, the above normal reservoir storage will act as a buffer to cushion the effects of below normal streamflows. Southern Idaho irrigators may be able to squeak by if the actual runoff is in the Most Probable Streamflow Forecast range. However, **if winter storms begin to materialize in January and February, as expected, and also extend into southern Idaho, water supplies should be adequate for the sixth year in a row.**

SNOWPACK

As of January 1, snowpack percentages decrease north to south from normal conditions in the Panhandle to half of normal in the Bear River Basin. Below is the Condensed SNOTEL Update Report, which reflects the most current snowpack conditions as of press time.

Idaho Natural Resources Conservation Service SNOTEL Condensed Update Report
for Tuesday, January 11, 2000

Basin	Snow Water Equivalent Percent of Average	Precipitation October 1 to Current Date Percent of Average
Panhandle Region	113	124
Clearwater Basin	118	121
Salmon Basin	91	88
Weiser, Payette Basins	88	93
Boise Basin	80	84
Big And Little Wood Basins	67	67
Big And Little Lost Basins	63	54
Henry's Fork, Teton Basins	75	66
Snake Basin Above Palisades	74	60
Willow, Blackfoot, Portneuf	73	60
Oakley Reservoir Basin	80	70
Salmon Falls Creek Basin	87	59
Bruneau Basin	87	57
Owyhee Basin	77	62
Bear River Basin	65	54

Stay tuned and on top of the changing conditions, check our Web site for the most current conditions: http://idsnow.id.nrcs.usda.gov/

PRECIPITATION

A dry and warm fall provided ideal harvest conditions, however it also left the root zone dry. September precipitation was only 5-20% of average across central and southern Idaho. Since October, only the Panhandle Region and Clearwater basin have received normal precipitation amounts. Precipitation since the water year started ranges from 110% of average in the Panhandle to 40% in the Bear River Basin. The 30-day outlook provided by the National Weather Service essentially cuts the state in half with above normal precipitation to the north and near normal in the south. The 90-day forecast is for near-normal temperatures and above-average precipitation.

RESERVOIRS

All of Idaho's reservoirs and natural lakes are reporting storage levels in the 110-150% of average range which means they are 50-80% of capacity. If conditions change for the better in the second half of winter, some reservoirs may need to make releases to maintain adequate space for the spring runoff. Note: NRCS reports reservoir information in terms of usable volumes, which includes both active, inactive, and in some cases dead storage. Other operators may report reservoir contents in different terms. For additional information, see the reservoir definitions in the back of this report.

STREAMFLOW

Streamflow forecasts are for 100-110 of average in northern Idaho. The Salmon and Payette rivers are forecast at 80-90% of average. The Boise and upper Snake basins are forecast at 65-85% of average. The lowest streamflow forecasts are in the 30-60% of average range in the Camas, Big and Little Wood, Owyhee, Bruneau, Salmon Falls, Goose and Bear river basins.

RECREATION

Winter recreation opportunities are improving since the first of the year with new snowfall across the state. Cold temperatures have kept snowpack densities lighter than normal. Snow depths in the west-central and northern mountains are near normal or above normal even though snow water content levels are near to below normal. River runners should see a good runoff season in northern Idaho. High desert streams in the southern part of the state may have a shorter floating season if the current conditions persist. River runners and water users can keep their fingers crossed and hope the current dividing line between above and below normal snowpacks, which is now centered across the Salmon River basin, moves farther south!

WHAT'S NEW FOR WATER YEAR 2000!

- Snow Depth Sensors – Want to find out how deep the snow is without leaving your office or home? This information is now collected at 20 Idaho SNOTEL sites by ultrasonic snow depth sensors. The sensors monitor depth of snow on the ground. New snowfall amounts can be determined along with snowpack densities. Just click on our Recreation Internet page at http://idsnow.id.nrcs.usda.gov/snow/recreation.html to get daily or even hourly snow depth information.

- NRCS installed a new SNOTEL site at Bogus Basin Ski Area, 16 miles north of Boise. The automated site was funded by Bogus Basin Ski Area. Additional sensors (wind, solar radiation, relative humidity, soil moisture and soil temperature) were also installed as part of a rain-on-snow study and Boise basin snowpack and streamflow-modeling project. Hopefully, this site will replace the manually measured snow course that has been measured twice a month, January-June, since 1942.

- Two New Streamflow Forecasts – Starting this year, NRCS will forecast the Blackfoot Reservoir Inflow and the Lake Fork Payette River near McCall. As requested by the Fort Hall Indian Agency, Shoshone-Bannock Tribes, we were able to develop a good streamflow forecast equation. This forecast will help them manage the inflow and releases from the reservoir. Our forecast hydrologist was also able to develop a very good equation for Lake Fork Payette River. This is a high elevation stream whose source is almost entirely dependent upon snowmelt. This forecast will assist the Lake Fork Irrigation District in wise management of their water supply and in determining when excess water may also help maintain minimum streamflows.

- Y2K and Data Transfer Problems – Only minor problems occurred with a few computer programs that post data to different computers. Of the 650 SNOTEL sites in the West, nearly all of them reported via meteor-burst trail without a glitch. We discovered even meteors were Y2K compatible!

IDAHO SURFACE WATER SUPPLY INDEX (SWSI)
As of January 1, 2000

The Surface Water Supply Index (SWSI) is predictive indicator of surface water availability within a watershed for the spring and summer water use season. The index is calculated by combining pre-runoff reservoir storage (carryover) with forecasts of spring and summer streamflow. SWSI values are scaled from +4.1 (abundant supply) to -4.1 (extremely dry), with a value of zero indicating a median water supply as compared to historical occurrences.

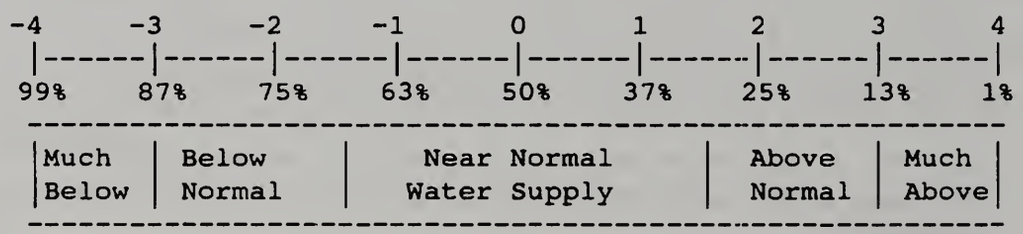
SWSI values are published January through May, and provide a more comprehensive outlook of water availability than either streamflow forecasts or reservoir storage figures alone. The SWSI index allows comparison of water availability between basins for drought or flood severity analysis. Threshold SWSI values have been established for most basins to indicate the potential for agricultural water shortages.

The following agencies and cooperators provide assistance in the preparation of the Surface Water Supply Index for Idaho:

US Department of Commerce, National Weather Service
US Bureau of Reclamation
Idaho Water Users Association
US Army Corps of Engineers
Idaho Department of Water Recourses
PacifiCorp

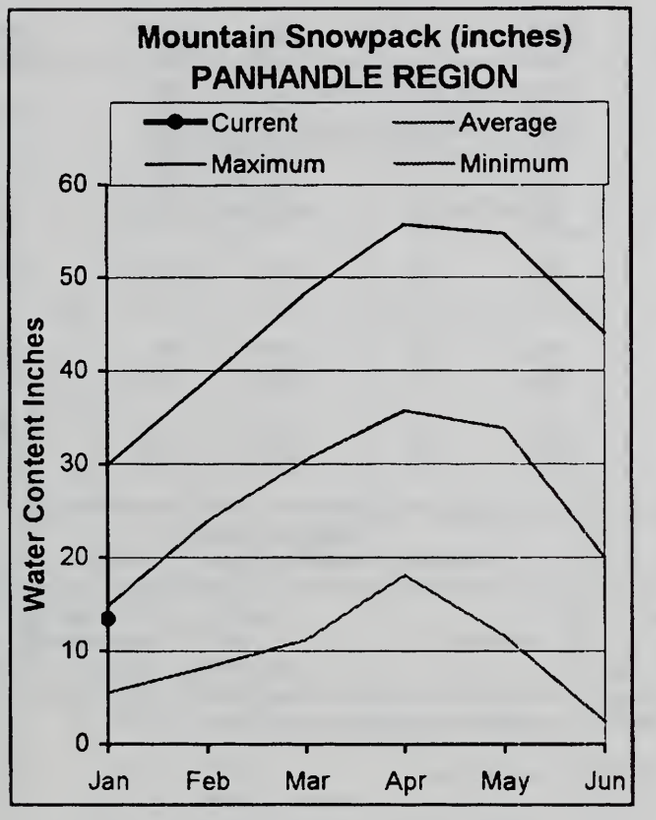
BASIN or REGION	*SWSI Value*	*Most Recent Year With Similar SWSI Value*	*Agricultural Water Supply Shortage May Occur When SWSI is Less Than*
PANHANDLE	0.4	1996	NA
CLEARWATER	-1.3	1995	NA
SALMON	-0.3	1981	NA
WEISER	-1.6	1985	NA
PAYETTE	0.1	1981	NA
BOISE	-2.2	1989	-2.6
BIG WOOD	-2.0	1989	-1.4
LITTLE WOOD	-2.0	1989	-2.1
BIG LOST	-1.7	1987	-0.8
LITTLE LOST	-0.7	1996	0.0
HENRYS FORK	-1.5	1981	-3.3
SNAKE (AMERICAN FALLS)	0.7	1995	-2.0
OAKLEY	0.6	1995	0.0
SALMON FALLS	0.1	1989	0.0
BRUNEAU	-1.9	1991	NA
OWYHEE	-0.2	1998	NA
BEAR RIVER	-0.4	1987	-3.8

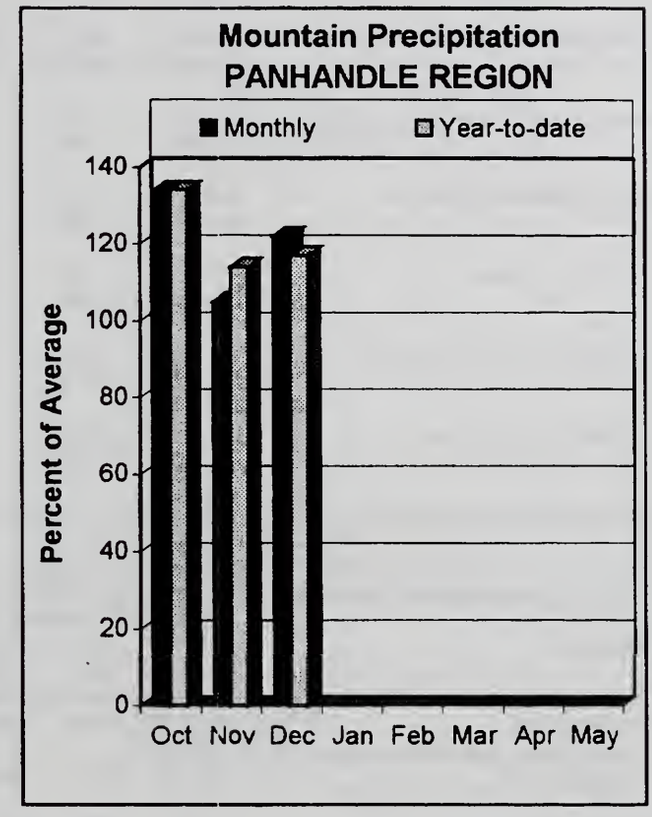
SWSI SCALE, PERCENT CHANCE OF EXCEEDANCE, AND INTERPRETATION



Note: The Percent Chance of Exceedance is an indicator of how often a range of SWSI values might be expected to occur. Each SWSI unit represents about 12% of the historical occurrences. As an example of interpreting the above scale, the SWSI can be expected to be greater than -3.0, 87% of the time and less than -3.0, 13% of the time. Half the time, the SWSI will be below and half the time above a value of zero. The interval between -1.5 and +1.5 described as "Near Normal Water Supply", represents three SWSI units and would be expected to occur about one third (36%) of the time.

PANHANDLE REGION
JANUARY 1, 2000





WATER SUPPLY OUTLOOK

As of January 1, the Panhandle Region hosted some of the best snowpacks in the West. The new automated snow depth sensor at Bear Mountain SNOTEL, located about 10 miles north of Clark Fork at 5,400 feet, reached 120 inches deep on January 10. Average depth on this date is 87 inches. With snow water content levels at near normal levels, streams are forecast at near normal summer runoff volumes.

PANHANDLE REGION
Streamflow Forecasts - January 1, 2000

Forecast Point	Forecast Period	<<= Drier = Future Conditions = Wetter =>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
KOOTENAI at Leonia (1,2)	APR-JUL	5303	6931	7670	107	8409	10037	7199
	APR-SEP	6098	7970	8820	107	9670	11542	8275
CLARK FK at Whitehorse Rpds (1,2)	APR-JUL	5469	8860	10400	89	11940	15331	11730
	APR-SEP	6073	9805	11500	89	13195	16927	12910
PEND OREILLE Lake Inflow (1,2)	APR-JUL	6617	10319	12000	91	13681	17383	13150
	APR-SEP	7213	11261	13100	91	14939	18987	14370
PRIEST near Priest River (1,2)	APR-JUL	639	781	845	104	909	1051	812
	APR-SEP	679	827	895	104	963	1111	865
COEUR D'ALENE at Enaville	APR-JUL	547	702	808	105	914	1069	770
	APR-SEP	583	742	850	105	958	1117	809
ST.JOE at Calder	APR-JUL	946	1127	1250	107	1373	1554	1169
	APR-SEP	999	1184	1310	106	1436	1621	1237
SPOKANE near Post Falls (2)	APR-JUL	2055	2522	2840	108	3158	3625	2633
	APR-SEP	2117	2595	2920	107	3245	3723	2730
SPOKANE at Long Lake	APR-JUL	2354	2840	3170	108	3500	3986	2936
	APR-SEP	2533	3037	3380	107	3723	4227	3159

PANHANDLE REGION
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
HUNGRY HORSE	3451.0	2903.0	2604.0	2586.0
FLATHEAD LAKE	1791.0	981.0	800.5	1305.0
NOXON RAPIDS	335.0	307.5	312.1	317.1
PEND OREILLE	1561.3	715.0	910.2	722.0
COEUR D'ALENE	238.5	111.5	114.5	130.5
PRIEST LAKE	119.3	60.0	59.0	55.3

PANHANDLE REGION
Watershed Snowpeck Analysis - January 1, 2000

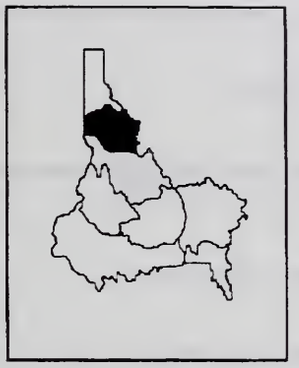
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Kootenai ab Bonners Ferry	16	69	92
Moyie River	6	67	92
Priest River	4	69	107
Pend Oreille River	66	68	88
Rathdrum Creek	4	106	130
Hayden Lake	0	0	0
Coeur d'Alene River	5	76	97
St. Joe River	3	76	90
Spokane River	11	89	106
Palouse River	1	0	125

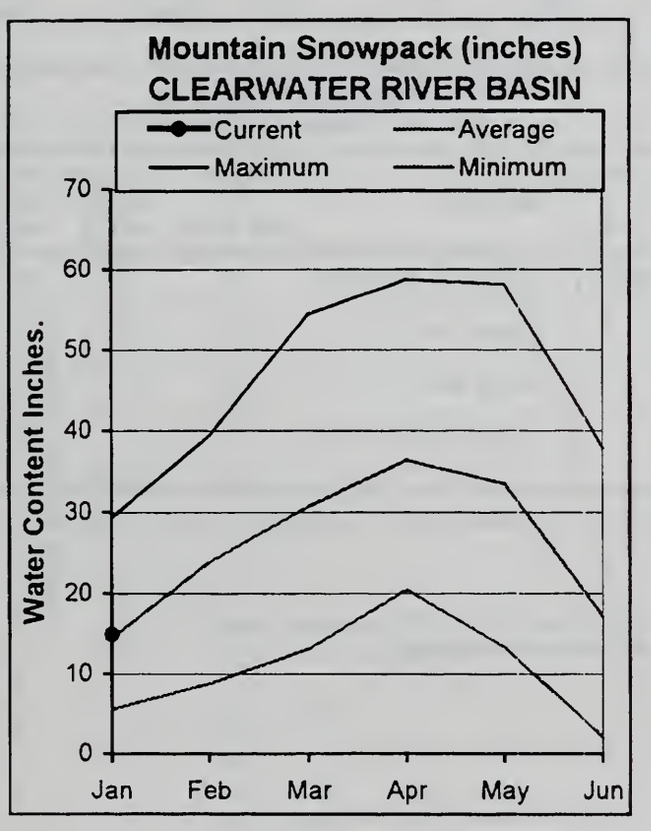
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

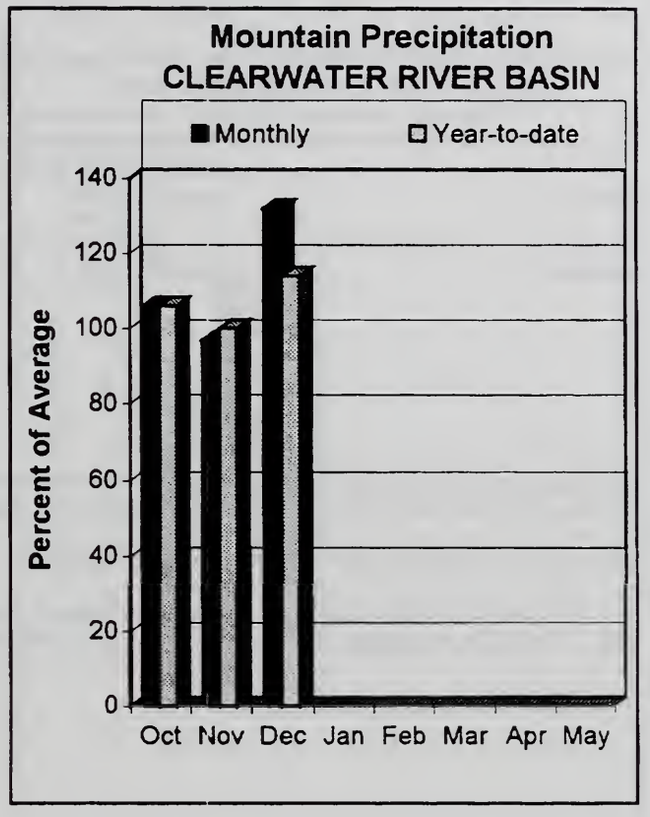
The average is computed for the 1961-1990 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

CLEARWATER RIVER BASIN
JANUARY 1, 2000







WATER SUPPLY OUTLOOK

Snow water content levels in the Clearwater basin are near normal. After being drafted to about 65% of active capacity this summer, Dworshak Reservoir is now at its normal storage level. Streamflow forecasts call for normal runoff this season in the Clearwater basin.

CLEARWATER RIVER BASIN
Streamflow Forecasts - January 1, 2000

Forecast Point	Forecast Period	<<== Drier == Future Conditions == Wetter ==>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
DWORSHAK RESV INFLOW (1,2)	APR-JUL	1532	2493	2800	104	3107	4031	2687
	APR-SEP	1973	2666	2980	104	3294	3987	2858
CLEARWATER at Orofino (1)	APR-JUL	2506	4246	4710	100	5174	6952	4729
	APR-SEP	3440	4492	4970	100	5448	6500	4990
CLEARWATER at Spalding (1,2)	APR-JUL	4038	6977	7790	102	8603	11503	7618
	APR-SEP	5570	7399	8230	102	9061	10890	8051

CLEARWATER RIVER BASIN
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
DWORSHAK	3468.0	2478.0	2410.9	2396.0

CLEARWATER RIVER BASIN
Watershed Snowpack Analysis - January 1, 2000

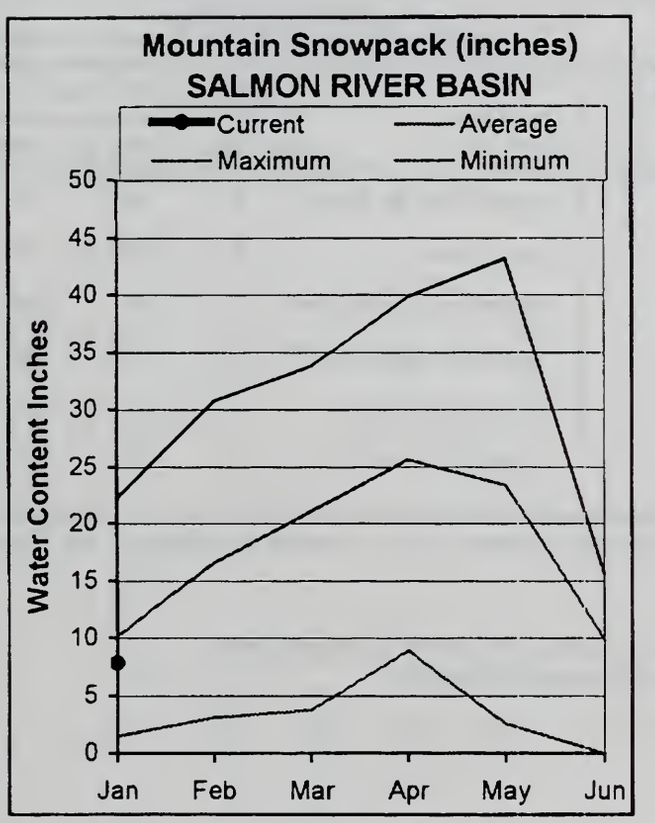
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
North Fork Clearwater	9	72	103
Lochsa River	3	60	93
Selway River	4	74	108
Clearwater Basin Total	16	74	103

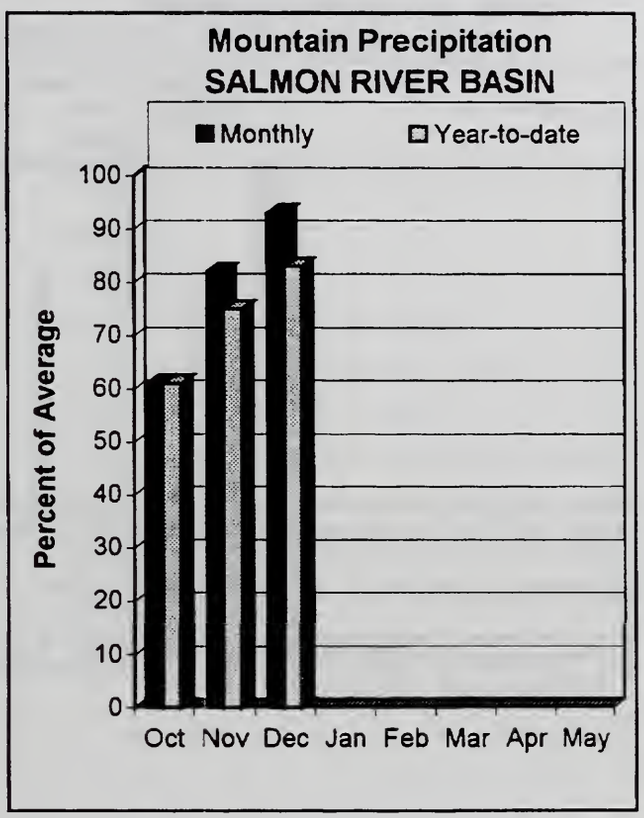
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

SALMON RIVER BASIN
JANUARY 1, 2000





WATER SUPPLY OUTLOOK

The Salmon River is the dividing line between above and below normal snowpacks in the State. As of January 1, snowpacks ranged from 70% of average in the Middle Fork Salmon River and Salmon River above Salmon to 90% in the Lemhi River. Currently, streamflow forecasts are for 87% of average in the Salmon River above Salmon and 93% for the Salmon River at White Bird. The Salmon River basin is also the dividing line between above and below normal snowpacks in the West. River runners can keep their fingers crossed and hope this dividing line moves farther south! In other La Nina type years, with the exception of 1989, the Salmon River April 1 snowpack ranged from 115-160% of average while summer streamflow ranged from 125-160%.

SALMON RIVER BASIN
Streamflow Forecasts - January 1, 2000

Forecast Point	Forecast Period	<<== Drier == Future Conditions == Wetter ==>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
SALMON at Salmon (1)	APR-JUL	313	652	755	87	858	1199	869
	APR-SEP	529	775	887	87	999	1245	1019
SALMON at White Bird (1)	APR-JUL	3216	4953	5560	93	6167	8160	5956
	APR-SEP	4045	5499	6160	93	6821	8275	6602

SALMON RIVER BASIN
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg

SALMON RIVER BASIN
Watershed Snowpack Analysis - January 1, 2000

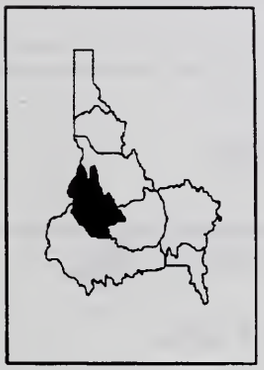
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Salmon River ab Salmon	8	54	59
Lemhi River	5	75	90
Middle Fork Salmon River	3	53	69
South Fork Salmon River	3	52	82
Little Salmon River	4	47	76
Salmon Basin Total	23	57	80

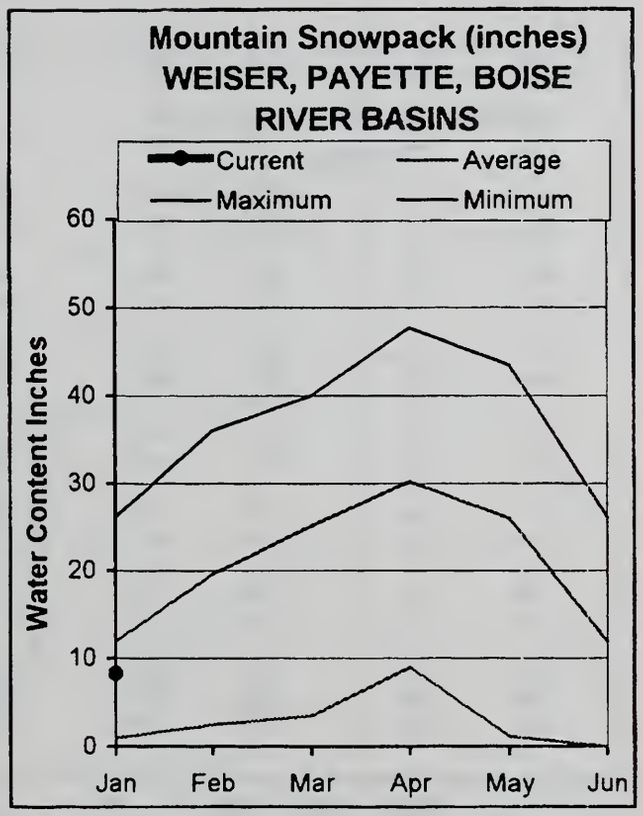
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

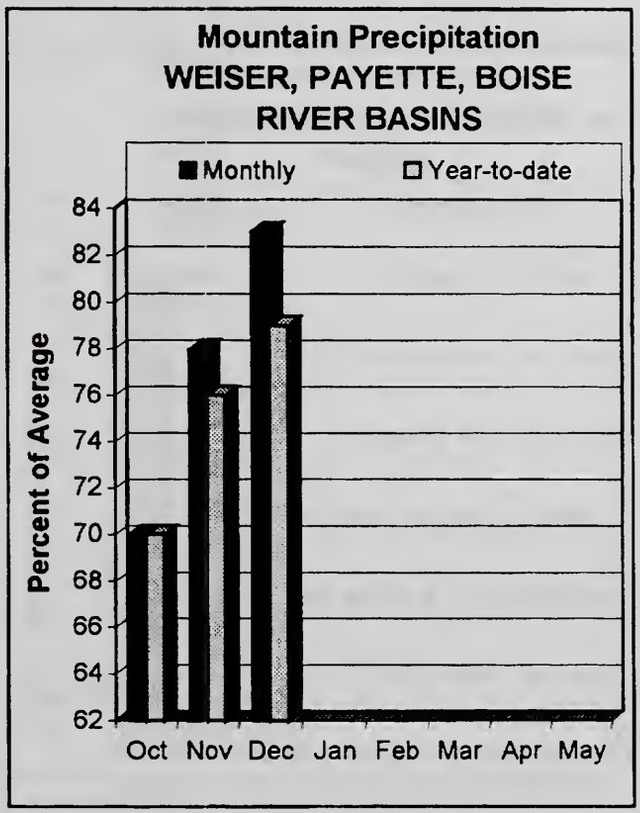
The average is computed for the 1961-1990 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

WEISER, PAYETTE, BOISE RIVER BASINS JANUARY 1, 2000







WATER SUPPLY OUTLOOK

January 1 snowpacks range from a high of 86% of average in the North Fork Payette basin to a low of 53% in the South Fork Boise basin. Streamflow forecasts mirror this snowfall pattern and range from a high of 98% of average in the North Fork Payette River to a low of 63% in the South Fork Boise River. On the positive side, reservoir storage is in good shape for both the Boise and Payette systems at 60-70% of capacity. The Boise Basin Surface Water Supply Index (SWSI) is –2.2, which is still above the Agricultural Water Supply Shortage Threshold Level.

WEISER, PAYETTE, BOISE RIVER BASINS
Streamflow Forecasts - January 1, 2000

Forecast Point	Forecast Period	<<== Drier == Future Conditions == Wetter ==>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	50% (Most Probable) (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
WEISER nr Weiser (1)	APR-JUL	66	234	310	80	386	554	386
	APR-SEP	74	253	335	81	417	596	415
SF PAYETTE at Lowman	APR-JUL	210	295	352	82	409	494	432
	APR-SEP	259	349	411	84	473	563	488
DEADWOOD RESERVOIR Inflow (1,2)	APR-JUL	61	98	113	84	128	163	135
	APR-SEP	68	102	117	82	132	166	143
LAKE FORK PAYETTE near McCall	APR-JUL	63	75	83	98	91	102	84
	APR-SEP	66	78	86	98	94	107	88
NF PAYETTE nr Cascade (1,2)	APR-JUL	243	389	456	92	523	669	496
	APR-SEP	282	414	485	91	556	688	533
NF PAYETTE nr Banks (2)	APR-JUL	378	513	605	93	697	83<	648
	APR-SEP	397	539	635	92	731	873	690
PAYETTE nr Horseshoe Bend (1,2)	APR-JUL	730	1198	1411	87	1624	2092	1618
	APR-SEP	831	1325	1550	88	1775	2269	1755
BOISE near Twin Springs (1)	APR-JUL	290	405	480	76	555	669	631
	APR-SEP	256	431	511	75	591	766	686
SF BOISE at Anderson Ranch Dam (1,2)	APR-JUL	201	272	345	63	418	490	544
	APR-SEP	115	282	358	62	434	601	582
MORES CREEK near Arrowrock Dam	APR-JUL	46	75	94	73	113	142	129
	APR-SEP	49	78	98	73	118	147	134
BOISE near Boise (1,2)	APR-JUN	360	696	848	67	1000	1336	1264
	APR-JUL	387	788	970	68	1152	1553	1421
	APR-SEP	429	849	1039	68	1229	1649	1535

WEISER, PAYETTE, BOISE RIVER BASINS
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
MANN CREEK	11.1	1.7	3.9	3.6
CASCADE	703.2	483.3	488.6	420.4
DEADWOOD	161.9	115.6	123.8	73.5
ANDERSON RANCH	464.2	370.3	390.7	306.5
ARROWROCK	286.6	140.5	176.8	184.3
LUCKY PEAK	293.2	103.3	113.9	89.3
LAKE LOWELL (DEER FLAT)	177.1	103.9	110.3	113.7

WEISER, PAYETTE, BOISE RIVER BASINS
Watershed Snowpack Analysis - January 1, 2000

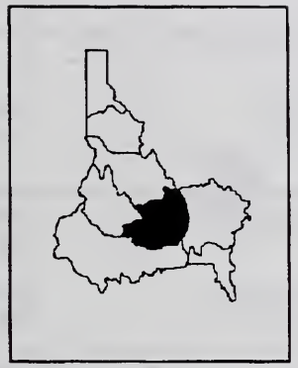
Watershed	Number of Data Sites	This Year as % of Last Yr	This Year as % of Average
Mann Creek	1	48	75
Weiser River	3	43	71
North Fork Payette	8	53	86
South Fork Payette	4	56	65
Payette Basin Total	13	54	77
Middle & North Fork Boise	6	52	64
South Fork Boise River	8	44	53
Mores Creek	3	56	74
Boise Basin Total	13	49	59
Canyon Creek	2	33	31

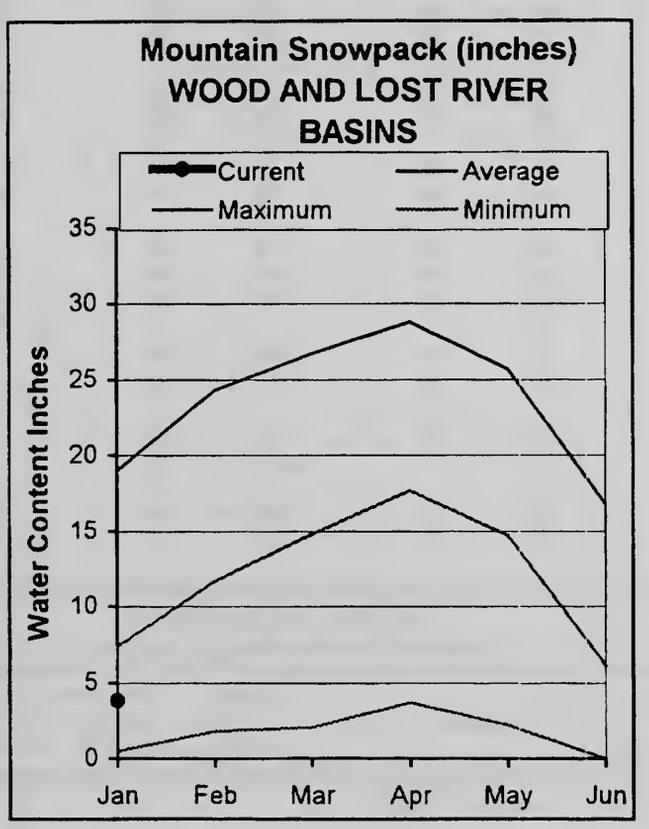
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

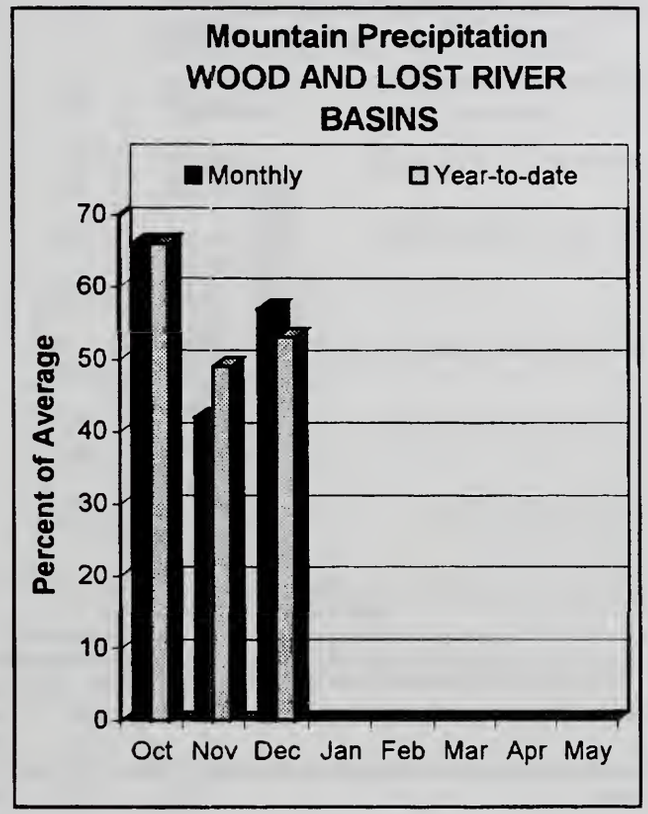
The average is computed for the 1961-1990 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

WOOD and LOST RIVER BASINS
JANUARY 1, 2000







WATER SUPPLY OUTLOOK

The lowest snowpack percentages in the state are about 40% of average in the Camas Creek, Little Wood and Big Lost basins. The Little Lost River hosts the highest snowpack in these central mountains at 60% of average while the Big Wood above Magic Reservoir has 54% of normal snowpack. Magic, Mackay and Little Wood reservoirs are each about half full and will help buffer effects of below normal runoff levels. Water users and winter recreationists can keep their fingers crossed for more snow and storms in the second half of winter.

WOOD AND LOST RIVER BASINS
Streamflow Forecasts - January 1, 2000

Forecast Point	Forecast Period	<<== Drier == Future Conditions == Wetter ==>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
BIG WOOD at Hailey (1)	APR-JUL	19.0	102	140	55	178	261	255
	APR-SEP	9.0	121	163	56	205	318	289
BIG WOOD near Bellevue	APR-JUL	2.0	38	77	42	116	172	183
	APR-SEP	2.0	43	83	42	123	181	197
CAMAS CREEK near Blaine	APR-JUL	6.0	18.0	30	29	45	72	102
	APR-SEP	7.0	19.0	31	30	46	73	103
BIG WOOD below Magic Dam (2)	APR-JUL	3.0	64	120	41	176	259	295
	APR-SEP	3.0	63	121	39	179	263	310
LITTLE WOOD near Carey (2)	MAR-JUL	5.7	24	46	46	68	101	100
	MAR-SEP	6.0	27	50	46	73	107	108
BIG LOST at Howell Ranch	APR-JUN	49	79	99	70	119	149	141
	APR-JUL	51	93	122	67	151	193	181
	APR-SEP	62	108	140	68	172	218	206
BIG LOST below Mackay Reservoir (2)	APR-JUL	22	63	91	60	119	160	152
	APR-SEP	35	80	110	60	140	185	184
LITTLE LOST blw Wet Creek	APR-JUL	15.1	20	24	77	28	33	31
	APR-SEP	18.9	26	30	77	35	41	39
LITTLE LOST nr Howe	APR-JUL	18.0	22	25	76	28	32	33
	APR-SEP	24	29	33	77	37	42	43

WOOD AND LOST RIVER BASINS
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
MAGIC	191.5	95.8	128.3	82.1
LITTLE WOOD	30.0	14.7	19.2	13.3
MACKAY	44.4	25.6	30.0	25.4

WOOD AND LOST RIVER BASINS
Watershed Snowpack Analysis - January 1, 2000

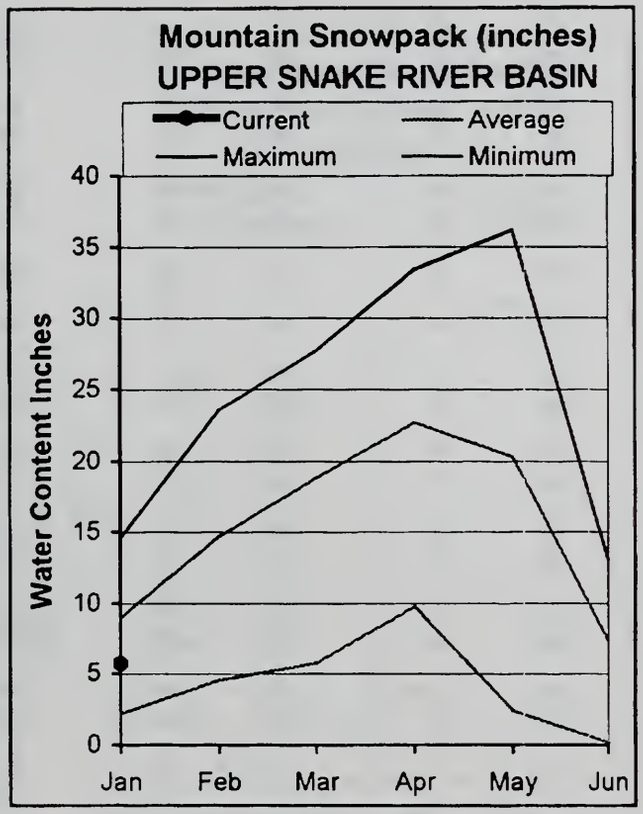
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Big Wood ab Magic	9	47	54
Camas Creek	4	28	37
Big Wood Basin Total	12	42	50
Little Wood River	4	33	38
Fish Creek	0	0	0
Big Lost River	5	31	39
Little Lost River	3	50	60
Birch-Medicine Lodge Creek	2	52	75

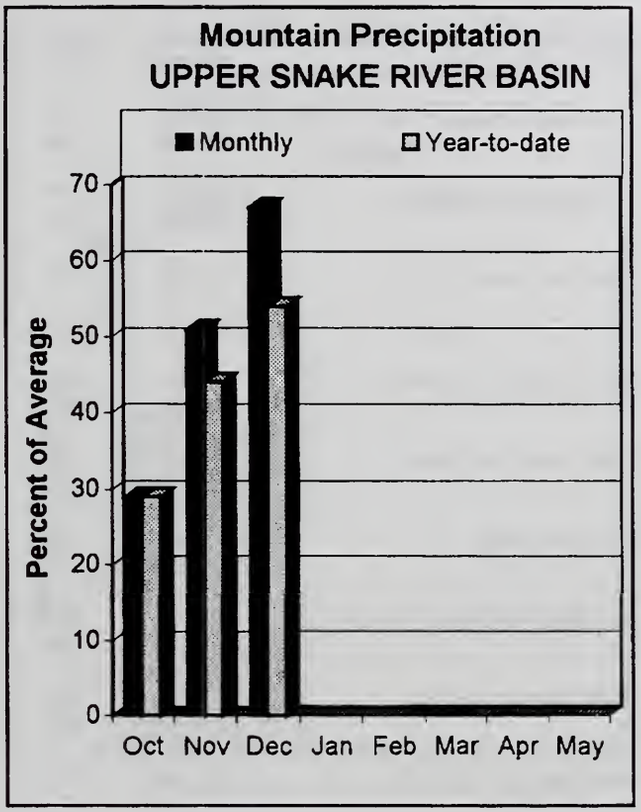
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

UPPER SNAKE RIVER BASIN
JANUARY 1, 2000





WATER SUPPLY OUTLOOK

Snowpacks range from 50-70% of average. The better snowpacks are in the Henrys Fork area while the mainstem Snake River basins are in the 60% of average range. The snowpack percentage for the Snake River basin above Palisades Reservoir was the lowest since January 1, 1994. Reservoir storage is 120% of average, 76% of capacity, for the 8 major reservoirs in the upper Snake basin. Streamflow forecasts range from 85% of average for the Henrys Fork to 64% for Blackfoot Reservoir Inflow, which is a new forecast point for this year. The Surface Water Supply Index (SWSI) is –1.5 for the Henrys Fork and +0.7 for the Snake River above American Falls and indicates water supplies should be adequate even if these below normal conditions hold true for the remainder of the season.

UPPER SNAKE RIVER BASIN
Streamflow Forecasts - January 1, 2000

Forecast Point	Forecast Period	<<== Drier == Future Conditions == Wetter ==>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
HENRYS FORK near Ashton (2)	APR-JUL	388	443	481	88	519	574	544
	APR-SEP	510	576	620	85	664	730	730
HENRYS FORK near Rexburg (2)	APR-JUL	734	904	1020	83	1136	1306	1228
	APR-SEP	917	1109	1240	80	1371	1563	1551
FALLS near Squirrel (1,2)	APR-JUL	224	283	310	85	337	396	364
	APR-SEP	272	340	370	86	400	468	432
TETON near Driggs	APR-JUL	79	109	130	86	151	181	152
	APR-SEP	108	145	170	85	195	232	199
TETON near St. Anthony	APR-JUL	197	261	305	81	349	413	377
	APR-SEP	247	320	370	81	420	493	457
SNAKE near Moran (1,2)	APR-SEP	466	628	702	81	776	938	869
PACIFIC CREEK at Moran	APR-SEP	87	113	131	79	149	175	166
SNAKE above Palisades (2)	APR-JUL	1361	1665	1871	81	2077	2381	2311
	APR-SEP	1593	1934	2166	81	2398	2739	2671
GREYS above Palisades	APR-JUL	135	194	235	71	276	335	333
	APR-SEP	170	235	280	72	325	390	388
SALT near Etna	APR-JUL	108	178	225	71	272	342	319
	APR-SEP	151	231	285	71	339	419	399
PALISADES RESERVOIR INFLOW (1,2)	APR-JUL	1557	2216	2515	78	2814	3473	3226
	APR-SEP	1872	2613	2950	78	3287	4028	3763
SNAKE near Heise (2)	APR-JUL	1890	2366	2690	78	3014	3490	3451
	APR-SEP	2257	2801	3170	78	3539	4083	4049
BLACKFOOT RESV INFLOW	APR-JUN	16.0	49	72	64	95	128	113
SNAKE nr Blackfoot (1,2)	APR-JUL	2133	3089	3560	80	4031	4977	4444
	APR-SEP	2694	3858	4386	80	4914	6078	5482
PORTNEUF at Topaz	MAR-JUL	42	55	64	74	73	86	86
	MAR-SEP	53	69	79	74	89	105	107
AMERICAN FALLS RESV INFLOW (1,2)	APR-JUL	552	1795	2270	74	2745	3986	3066
	APR-SEP	745	1914	2445	74	2976	4145	3303

UPPER SNAKE RIVER BASIN
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
HENRYS LAKE	90.4	88.9	87.9	77.4
ISLAND PARK	135.2	112.1	114.5	89.4
GRASSY LAKE	15.2	12.2	12.6	10.5
JACKSON LAKE	847.0	632.3	590.0	470.2
PALISADES	1400.0	1173.0	1207.3	1036.0
RIRIE	80.5	39.3	37.9	33.8
BLACKFOOT	348.7	269.8	262.3	227.7
AMERICAN FALLS	1672.6	1172.5	1173.0	974.0

UPPER SNAKE RIVER BASIN
Watershed Snowpack Analysis - January 1, 2000

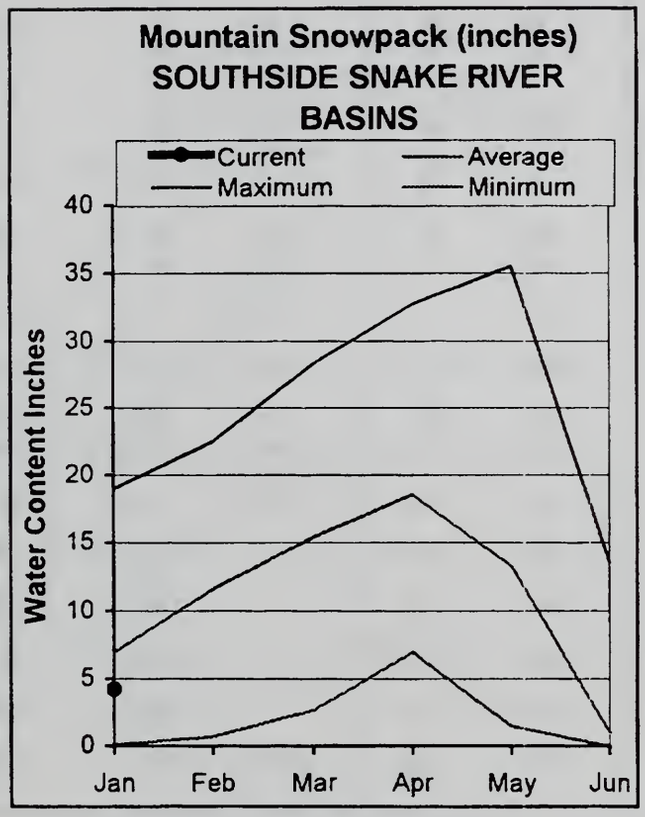
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Camas-Beaver Creeks	4	55	51
Henrys Fork-Falls River	10	64	74
Teton River	7	82	69
Henrys Fork above Rexburg	17	69	72
Snake above Jackson Lake	9	60	66
Gros Ventre River	2	50	47
Hoback River	5	61	57
Greys River	3	66	62
Salt River	3	66	64
Snake above Palisades	21	61	63
Willow Creek	7	75	73
Blackfoot River	3	72	66
Portneuf River	2	57	49
Snake abv American Falls	31	63	64

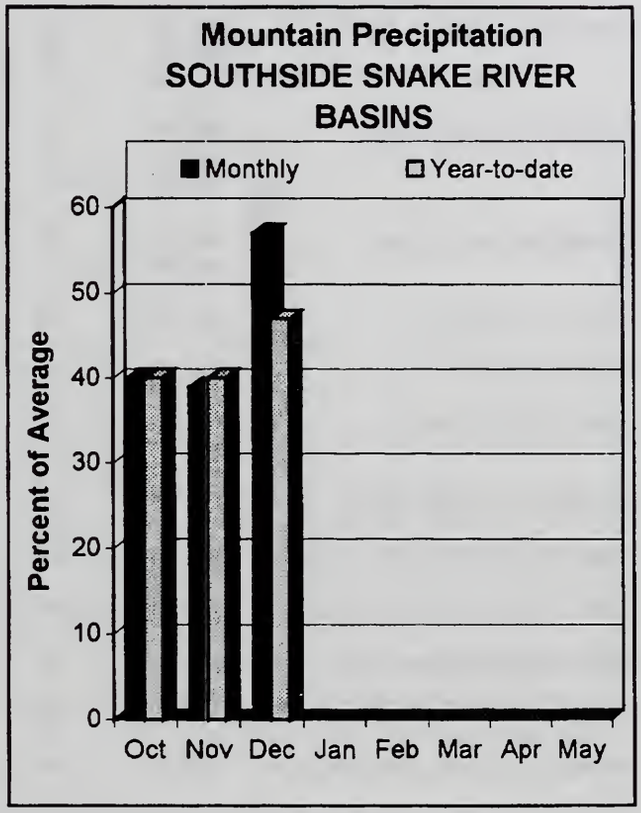
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table. The average is computed for the 1961-1990 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.

(2) - The value is natural flow - actual flow may be affected by upstream water management.

SOUTHSIDE SNAKE RIVER BASINS JANUARY 1, 2000





WATER SUPPLY OUTLOOK

Snowpack in the high desert streams range from 50-70% of average. Reservoir storage is above normal for Oakley and Salmon Falls reservoirs and near normal for Owyhee Reservoir. Precipitation since the water year started October 1 is only about half of normal. Streamflow forecasts are some of the lowest in the state at 45-55% of average. As a result of the good carryover storage, irrigation water supplies should be adequate for the Owyhee and Oakley reservoir water users. The Salmon Falls Surface Water Supply Index is near its shortage threshold range, but conditions can still improve, with more than half the snow season still to come.

SOUTHSIDE SNAKE RIVER BASINS
Streamflow Forecasts - January 1, 2000

Forecast Point	Forecast Period	<<= Drier = Future Conditions = Wetter =>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
OAKLEY RESV INFLOW	MAR-JUL	7.9	13.1	17.3	52	22	30	33
	MAR-SEP	9.4	15.0	19.5	54	25	33	36
OAKLEY RESV STORAGE	FEB-28	36	38	40	138	41	43	29
	MAR-31	39	42	44	132	46	49	33
	APR-30	42	46	49	128	51	55	38
SALMON FALLS CREEK nr San Jacinto	MAR-JUN	25	38	49	57	61	81	86
	MAR-JUL	26	40	52	56	64	86	91
	MAR-SEP	29	44	56	58	69	92	96
SALMON FALLS RESV STORAGE	FEB-28	53	57	60	109	62	66	55
	MAR-31	56	63	67	105	72	79	64
	APR-30	57	67	73	88	80	89	83
BRUNEAU near Hot Springs	MAR-JUL	69	103	130	55	160	211	235
	MAR-SEP	75	111	140	57	172	225	246
OWYHEE nr Owyhee (2)	APR-JUL	0.9	13.0	34	40	55	86	86
OWYHEE near Rome	FEB-JUL	99	199	286	46	389	570	622
OWYHEE RESV INFLOW (2)	FEB-JUL	122	223	310	47	411	585	656
	FEB-SEP	131	233	320	47	420	593	684
SUCCOR CK nr Jordan Valley	FEB-JUL	0.2	5.3	10.1	62	14.9	22	16.2
SNAKE RIVER at King Hill (1,2)	APR-JUL	521		1910	66		3301	2896
SNAKE RIVER near Murphy (1,2)	APR-JUL	566		1960	66		3367	2980
SNAKE RIVER at Weiser (1,2)	APR-JUL	164		3300	60		6394	5465
SNAKE RIVER at Hells Canyon Dam (1,2	APR-JUL	429		3850	63		7232	6129
SNAKE blw Lower Granite Dam (1,2)	APR-JUL	7827	15304	18700	86	22096	29573	21650

SOUTHSIDE SNAKE RIVER BASINS
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
OAKLEY	74.5	34.9	39.6	22.6
SALMON FALLS	182.6	53.5	76.5	46.7
WILDHORSE RESERVOIR	71.5	46.0	53.3	30.5
OWYHEE	715.0	426.4	480.3	421.0
BROWNLEE	1419.3	1363.5	1348.2	1275.0

SOUTHSIDE SNAKE RIVER BASINS
Watershed Snowpack Analysis - January 1, 2000

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Raft River	1	61	66
Goose-Trapper Creeks	3	56	57
Salmon Falls Creek	6	69	66
Bruneau River	5	75	69
Owyhee Basin Total	8	62	51

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

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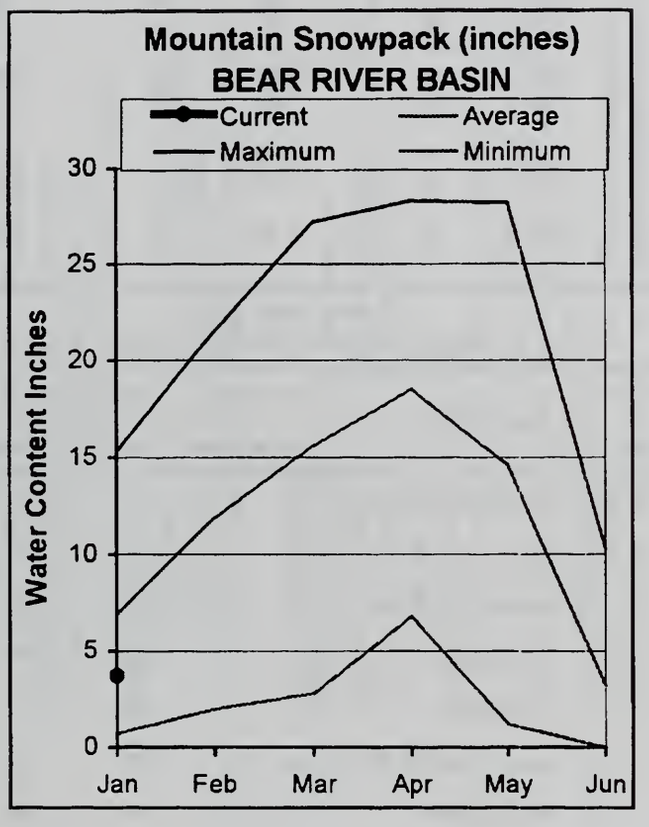
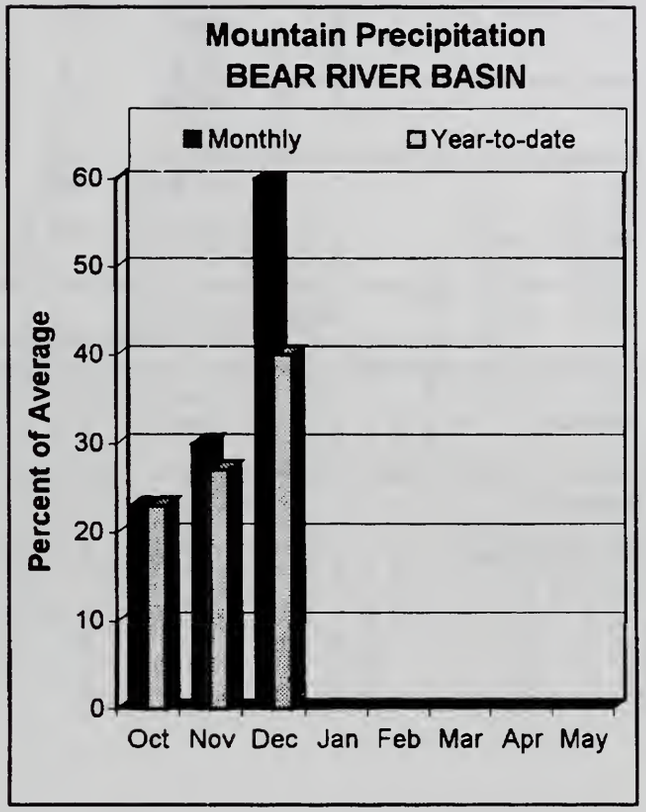
BEAR RIVER BASIN
JANUARY 1, 2000





WATER SUPPLY OUTLOOK

Snowpack and water year to date precipitation in the Bear River basin are the same, half of normal. Streamflow forecasts range from 68% of average in the headwaters of the Bear River near Randolph, Utah, to 55% for Bear River below Stewart Dam. On the positive side, Bear Lake storage is 118% of average, 81% of capacity, so water users with access to Bear Lake storage will have an adequate water supply this summer. Water users and winter recreationists can keep their fingers crossed and hope the storms that are currently crossing the state in early January also track across the Bear Basin. Stay tuned. Snowpack conditions can still improve with more than half the season in front of us.

BEAR RIVER BASIN
Streamflow Forecasts - January 1, 2000

Forecast Point	Forecast Period	<<= Drier = Future Conditions = Wetter =>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	50% (Most Probable) (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
BEAR R nr Randolph, UT	APR-JUL	0.0	48	80	68	112	160	118
	APR-SEP	3.0	49	84	66	119	170	127
SMITHS FK nr Border, WY	APR-JUL	38	53	66	65	82	113	102
	APR-SEP	47	64	79	67	97	132	118
THOMAS FK nr WY-ID State Line (Disc.	APR-JUL	8.3	13.2	18.0	55	25	39	33
	APR-SEP	9.6	14.8	20	56	27	42	36
BEAR R blw Stewart Dam nr Montpelier	APR-JUL	35	103	150	52	197	265	288
	APR-SEP	43	118	170	52	222	297	327
MONTPELIER CK nr Montpelier (Disc)(2	APR-JUL	3.6	5.1	6.5	53	8.2	11.7	12.2
	APR-SEP	4.8	6.4	7.8	55	9.5	12.7	14.2
CUB R nr Preston	APR-JUL	10.0	21	28	60	35	46	47

BEAR RIVER BASIN
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
BEAR LAKE	1421.0	1154.5	1139.9	982.0
MONTPELIER CREEK	4.0	2.7	2.2	1.7

BEAR RIVER BASIN
Watershed Snowpack Analysis - January 1, 2000

Watershed	Number of Data Sites	This Year as % of Last Yr	This Year as % of Average
Smiths & Thomas Forks	3	62	57
Bear River ab WY-ID line	10	66	46
Montpelier Creek	1	61	49
Mink Creek	1	62	49
Cub River	1	64	55
Bear River ab ID-UT line	15	65	47
Malad River	1	75	58

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

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Streamflow Adjustment List For All Forecasts Published In Idaho Basin Outlook Report Streamflow forecasts are projections of runoff volumes that would have occurred naturally without influences from upstream reservoirs or diversions. These values are referred to as natural or adjusted flows. To make these adjustments, changes in reservoir storage, diversions, and inter-basin transfers are added or subtracted from the observed (actual) streamflow volumes. The following list documents the adjustments made to each forecast point in this report. (Revised 1/2000).

Panhandle River Basins

KOOTENAI R AT LEONIA, ID
+ LAKE KOOCANUSA (STORAGE CHANGE)

CLARK FORK AT WHITEHORSE RAPIDS, ID
+ HUNGRY HORSE (STORAGE CHANGE)
+ FLATHEAD LAKE (STORAGE CHANGE)
+ NOXON RAPIDS RESV (STORAGE CHANGE)

PEND OREILLE LAKE INFLOW, ID
+ PEND OREILLE R AT NEWPORT, WA
+ HUNGRY HORSE (STORAGE CHANGE)
+ FLATHEAD LAKE (STORAGE CHANGE)
+ NOXON RAPIDS (STORAGE CHANGE
+ PEND OREILLE LAKE (STORAGE CHANGE)

PRIEST R NR PRIEST R, ID
+ PRIEST LAKE (STORAGE CHANGE)

COEUR D'ALENE R AT ENAVILLE, ID - No Corrections

ST. JOE R AT CALDER, ID - No Corrections

SPOKANE R NR POST FALLS, ID
+ COEUR D'ALENE LAKE (STORAGE CHANGE)

SPOKANE R AT LONG LAKE, WA
+ COEUR D'ALENE LAKE (STORAGE CHANGE)
+ LONG LAKE, WA (STORAGE CHANGE)

Clearwater River Basin

DWORSHAK RESERVOIR INFLOW, ID
+ DWORSHAK RESV (STORAGE CHANGE)
- CLEARWATER R AT OROFINO, ID
+ CLEARWATER R NR PECK, ID

CLEARWATER R AT OROFINO, ID - No Corrections

CLEARWATER R AT SPALDING, ID
+ DWORSHAK RESV (STORAGE CHANGE)

Salmon River Basin

SALMON R AT SALMON, ID - No Corrections

SALMON R AT WHITE BIRD, ID - No Corrections

Weiser, Payette, Boise River Basins

WEISER R NR WEISER, ID - No Corrections

SF PAYETTE R AT LOWMAN, ID - No Corrections

DEADWOOD RESERVOIR INFLOW, ID
+ DEADWOOD R BLW DEADWOOD RESV NR LOWMAN
+ DEADWOOD RESV (STORAGE CHANGE)

LAKE FORK PAYETTE RIVER NR MCCALL, ID – No Corrections

NF PAYETTE R AT CASCADE, ID
+ CASCADE RESV (STORAGE CHANGE)

NF PAYETTE R NR BANKS, ID
+ CASCADE RESV (STORAGE CHANGE)

PAYETTE R NR HORSESHOE BEND, ID
+ DEADWOOD RESV (STORAGE CHANGE)
+ CASCADE RESV (STORAGE CHANGE)

BOISE R NR TWIN SPRINGS, ID - No Corrections

SF BOISE R AT ANDERSON RANCH DAM, ID
+ ANDERSON RANCH RESV (STORAGE CHANGE)

BOISE R NR BOISE, ID
+ ANDERSON RANCH RESV (STORAGE CHANGE)
+ ARROWROCK RESV (STORAGE CHANGE)
+ LUCKY PEAK RESV (STORAGE CHANGE)

Wood and Lost River Basins

BIG WOOD R AT HAILEY, ID - No Corrections

BIG WOOD R NR BELLEVUE, ID - No Corrections

BIG WOOD R BLW MAGIC DAM NR RICHFIELD, ID
+ MAGIC RESV (STORAGE CHANGE)

LITTLE WOOD R NR CAREY, ID
+ LITTLE WOOD RESV (STORAGE CHANGE)

BIG LOST R AT HOWELL RANCH NR CHILLY, ID - No Corrections

BIG LOST R BLW MACKAY RESV NR MACKAY, ID
+ MACKAY RESV (STORAGE CHANGE)

LITTLE LOST R BLW WET CK NR HOWE, ID - No Corrections

LITTLE LOST R NR HOWE, ID - No Corrections (Disc)

Upper Snake River Basin

HENRYS FORK NR ASHTON, ID
+ HENRYS LAKE (STORAGE CHANGE)
+ ISLAND PARK RESV (STORAGE CHANGE)

HENRYS FORK NR REXBURG, ID
+ HENRYS LAKE (STORAGE CHANGE)
+ ISLAND PARK RESV (STORAGE CHANGE)
+ DIV FM HENRYS FK BTW ASHTON & ST. ANTHONY, ID
+ DIV FM HENRYS FK BTW ST. ANTHONY & REXBURG, ID
+ GRASSY LAKE (STORAGE CHANGE)

FALLS R ABV YELLOWSTONE CANAL NR SQUIRREL, ID
+ GRASSY LAKE (STORAGE CHANGE)

TETON R ABV SO LEIGH CK NR DRIGGS, ID - No Corrections

TETON R NR ST. ANTHONY, ID
- CROSS CUT CANAL
+ SUM OF DIVERSIONS ABV GAGE

SNAKE R NR MORAN, WY
+ JACKSON LAKE (STORAGE CHANGE)

PALISADES RESERVOIR INFLOW, ID
+ SNAKE R NR IRWIN, ID
+ JACKSON LAKE (STORAGE CHANGE)
+ PALISADES RESV (STORAGE CHANGE)

SNAKE R NR HEISE, ID
+ JACKSON LAKE (STORAGE CHANGE)
+ PALISADES RESV (STORAGE CHANGE)

BLACKFOOT RESVERVOIR INFLOW, ID
+ BLACKFOOT RIVER
+ BLACKFOOT RESERVOIR (STORAGE CHANGE
SNAKE R NR BLACKFOOT, ID
+ PALISADES RESV (STORAGE CHANGE)
+ JACKSON LAKE (STORAGE CHANGE)
+ DIV FM SNAKE R BTW HEISE AND SHELLY GAGES
+ DIV FM SNAKE R BTW SHELLY AND BLACKFT, ID
PORTNEUF R AT TOPAZ, ID - No Corrections
AMERICAN FALLS RESERVOIR INFLOW, ID
+ ALL CORRECTIONS MADE FOR HENRYS FK NR REXBURG, ID
+ JACKSON LAKE (STORAGE CHANGE)
+ PALISADES RESV (STORAGE CHANGE)
+ DIV FM SNAKE R BTW HEISE AND SHELLY GAGES
+ DIV FM SNAKE R BTW SHELLY AND BLACKFT GAGES

Southside Snake River Basins

OAKLEY RESERVOIR INFLOW, ID
+ GOOSE CK ABV TRAPPER CK NR OAKLEY, ID
+ TRAPPER CK NR OAKLEY, ID
SALMON FALLS CK NR SAN JACINTO, NV - No Corrections
BRUNEAU R NR HOT SPRINGS, ID - No Corrections
OWYHEE R NR GOLD CK, NV
+ WILDHORSE RESV (STORAGE CHANGE)
OWYHEE R NR OWYHEE, NV
+ WILDHORSE RESV (STORAGE CHANGE)
OWYHEE R NR ROME, OR
+ WILDHORSE RESV (STORAGE CHANGE)
+ JORDAN VALLEY RESV (STORAGE CHANGE)
OWYHEE RESERVOIR INFLOW, OR
+ OWYHEE R BLW OWYHEE DAM, OR
+ OWYHEE RESV (STORAGE CHANGE)
+ DIV TO NORTH AND SOUTH CANALS
SUCCOR CK NR JORDAN VALLEY, OR - No Corrections
SNAKE R - KING HILL, ID - No Corrections
SNAKE R NR MURPHY, ID - No Corrections
SNAKE R AT WEISER, ID - No Corrections
SNAKE R AT HELLS CANYON DAM, ID
+ BROWNLEE RESV (STORAGE CHANGE)

Bear River Basin

BEAR R NR RANDOLPH, UT
+ SULPHUR CK RESV (STORAGE CHANGE)
+ CHAPMAN CANAL DIVERSION
+ WOODRUFF NARROWS RESV (STORAGE CHANGE)
SMITHS FORK NR BORDER, WY - No Corrections
THOMAS FORK NR WY-ID STATELINE - No Corrections (Disc)
BEAR R BLW STEWART DAM, ID
+ SULPHUR CK RESV (STORAGE CHANGE)
+ CHAPMAN CANAL DIVERSION
+ WOODRUFF NARROWS RESV (STORAGE CHANGE)
+ DINGLE INLET CANAL
+ RAINBOW INLET CANAL
MONTPELIER CK AT IRR WEIR NR MONTPELIER, ID (Disc)
+ MONTPELIER CK RESV (STORAGE CHANGE)
CUB R NR PRESTON, ID - No Corrections

RESERVOIR CAPACITY DEFINITIONS (Units in 1,000 acre-feet, KAF)
Different agencies use various definitions when reporting reservoir capacity and contents. Reservoir storage terms include dead, inactive, active, and surcharge storage. This table lists these volumes for each reservoir, and defines the storage volumes NRCS uses when reporting capacity and current reservoir storage. In most cases, NRCS reports usable storage, which includes active and inactive storage. (Revised October 1998)

BASIN/ RESERVOIR	DEAD STORAGE	INACTIVE STORAGE	ACTIVE STORAGE	SURCHARGE STORAGE	NRCS CAPACITY	NRCS CAPACITY INCLUDES
PANHANDLE REGION						
HUNGRY HORSE	39.73	--	3451.00	--	3451.0	ACTIVE
FLATHEAD LAKE	Unknown	--	1791.00	--	1971.0	ACTIVE
NOXON RAPIDS	Unknown	--	335.00	--	335.0	ACTIVE
PEND OREILLE	406.20	112.40	1042.70	--	1561.3	DEAD+INACTIVE+ACTIVE
COEUR D'ALENE	--	13.50	225.00	--	238.5	INACTIVE+ACTIVE
PRIEST LAKE	20.00	28.00	71 30	--	119.3	DEAD+INACTIVE+ACTIVE
CLEARWATER BASIN						
DWORSHAK	--	1452.00	2016.00	--	3468.0	INACTIVE+ACTIVE
WEISER/BOISE/PAYETTE BASINS						
MANN CREEK	1.61	0.24	11.10	--	11.1	ACTIVE
CASCADE	--	50.00	653.20	--	703.2	INACTIVE+ACTIVE
DEADWOOD	1.50	--	161.90	--	161.9	ACTIVE
ANDERSON RANCH	29.00	41.00	423.18	--	464.2	INACTIVE+ACTIVE
ARROWROCK	--	--	286.60	--	286.6	ACTIVE
LUCKY PEAK	--	28.80	264.40	13.80	293.2	INACTIVE+ACTIVE
LAKE LOWELL	--	8.00	169.10	--	177.1	INACTIVE+ACTIVE
WOOD/LOST BASINS						
MAGIC	--	--	191.50	--	191.5	ACTIVE
LITTLE WOOD	--	--	30.00	--	30.0	ACTIVE
MACKAY	0.13	--	44.37	--	44.4	ACTIVE
UPPER SNAKE BASIN						
HENRYS LAKE	--	--	90.40	--	90.4	ACTIVE
ISLAND PARK	0.40	--	127.30	7.90	135.2	ACTIVE+SURCHARGE
GRASSY LAKE	--	--	15.18	--	15.2	ACTIVE
JACKSON LAKE	--	--	847.00	--	847.0	ACTIVE
PALISADES	44.10	155.50	1200.00	--	1400.0	DEAD+INACTIVE+ACTIVE
RIRIE	4.00	6.00	80.54	10.00	80.5	ACTIVE
BLACKFOOT	--	--	348.73	--	348.7	ACTIVE
AMERICAN FALLS	--	--	1672.60	--	1672.6	ACTIVE
SOUTHSIDE SNAKE BASINS						
OAKLEY	--	--	74.50	--	74.5	ACTIVE
SALMON FALLS	48.00	--	182.65	--	182.6	ACTIVE
WILDHORSE	--	--	71.50	--	71.5	ACTIVE
OWYHEE	406.83	--	715.00	--	715.0	ACTIVE
BROWNLEE	0.45	444.00	975.30	--	1419.3	INACTIVE+ACTIVE
BEAR RIVER BASIN						
WOODRUFF NARROWS	--	1.50	57.30	--	57.3	ACTIVE
WOODRUFF CREEK	--	4.00	4.00	--	4.0	ACTIVE
BEAR LAKE	--	--	1421.00	--	1421.0	ACTIVE
MONTPELIER CREEK	0.21	--	3.84	--	4.0	DEAD+ACTIVE

Interpreting Streamflow Forecasts

ntroduction

ach month, five forecasts are issued for each forecast point and each forecast period. Unless otherwise pecified, all streamflovv forecasts are for streamflow volumes that would occur naturally without any upstream fluences. Water users need to know what the different forecasts represent if they are to use the information orrectly when making operational decisions. The following is an explanation of each of the forecasts.

ost Probable (50 Percent Chance of Exceeding) Forecast. This forecast is the best estimate of streamflow olume that can be produced given current conditions and based on the outcome of similar past situations, There a 50 percent chance that the streamflow volume will exceed this forecast value. There is a 50 percent chance at the streamflow volume will be less than this forecast value.

he most probable forecast will rarely be exactly right, due to errors resulting from future weather conditions and e forecast equation itself. This does not mean that users should not use the most probable forecast; it means at they need to evaluate existing circumstances and determine the amount of risk they are willing to take by ccepting this forecast value.

o Decrease the Chance of Having Too Little Water

users want to make sure there is enough water available for their operations, they might determine that a 50 ercent chance of the streamflow volume being lower than the most probable forecast is too much risk to take. o reduce the risk of not having enough water available during the forecast period, users can base their perational decisions on one of the forecasts with a greater chance of being exceeded (or possibly some point in- etween). These include:

70 Percent Chance of Exceeding Forecast. There is a 70 percent chance that the streamflow volume will exceed this forecast value.
There is a 30 percent chance the streamflow volume will be less than this forecast value.

90 Percent Chance of Exceeding Forecast. There is a 90 percent chance that the streamflow volume will exceed this forecast value.
There is a 10 percent chance the streamflow volume will be less than this forecast value.

o Decrease the Chance of Having Too Much Water

users want to make sure they don't have too much water, they might determine that a 50 percent chance of the treamflow being higher than the most probable forecast is too much of a risk to take. To reduce the risk of having too much water available during the forecast period, users can base their operational decisions on one of the forecasts with a smaller chance of being exceeded. These include:

30 Percent Chance of Exceeding Forecast. There is a 30 percent chance that the streamflow volume will exceed this forecast value. There is a 70 percent chance the streamflow volume will be less than this forecas value.

10 Percent Chance of Exceeding Forecast. there is a 10 percent chance that the streamflow volume will exceed this forecast value. There is a 90 percent chance the streamflow volume will be less than this forecas value.

Using the forecasts - an example

Using the Most Probable Forecast. Using the example forecasts shown below, users can reasonably expect 36,000 acre-feet to flow past the gaging station on the Mary's River near Death between March I and July 31.

Using the Higher Exceedence Forecasts. If users anticipate a somewhat drier trend in the future (monthly and seasonal weather outlooks are available from the National Weather Service every two weeks), or if they are operating at a level where an unexpected shortage of water could cause problems, they might want to plan on receiving only 20,000 acre-feet (from the 70 percent chance of exceeding forecast). In seven out of ten years with similar conditions, streamflow volumes will exceed the 20,000 acre-foot forecast.

If users anticipate extremely dry conditions for the remainder of the season, or if they determine the risk of using the 70 percent chance of exceeding forecast is too great, then they might plan on receiving only 5000 acre-feet (from the 90 percent chance of exceeding forecast). Nine out of ten years with similar conditions, streamflow volumes will exceed the 5000 acre-foot forecast.

Using the Lower Exceedance Forecasts. If users expect wetter future conditions, or if the chance that five out of every ten years with similar conditions would produce streamflow volumes greater than 36,000 acre-feet was more than they would like to risk, they might plan on receiving 52,000 acre-feet (from the 30 percent chance of exceeding forecast) to minimize potential flooding problems. Three Out of ten years with similar conditions, streamflows will exceed the 52,000 acre-foot forecast.

In years when users expect extremely wet conditions for the remainder of the season and the threat of severe flooding and downstream damage exists, they might choose to use the 76,000 acre-foot (10 percent chance of exceeding) forecast for their water management operations. Streamflow volumes will exceed this level only one year out of ten.

WEISER, PAYETTE, BOISE RIVER BASINS
Streamflow Forecasts

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
SF PAYETTE RIVER at Lowman	APR-JUL	329	414	471	109	528	613	432
	APR-SEP	369	459	521	107	583	673	488
BOISE RIVER near Twin Springs (1)	APR-JUL	443	610	685	109	760	927	631
	APR-SEP	495	670	750	109	830	1005	

For more information concerning streamflow forecasting ask your local NRCS **field** *office for a copy of "A* **Field** *Office Guide* **for** *Interpreting Streamflow Forecasts'.*

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